

REMARKS

Claims 1-9 and 11-17 remain pending in the present application with claims 8 and 9 standing withdrawn from consideration based upon an earlier Restriction Requirement of the Examiner. New claims 12-17 have been added.

Support for newly added claims 12-17 can be found in the present specification at page 11, lines 14-17.

Proper consideration of each of the pending claims (i.e., claims 1-9 and 11) is respectfully requested at present based on the following comments.

Claim Rejection under 35 U.S.C. §103(a)

At pages 2-6 of the Office Action, claims 1-7 and 11 have been rejected under 35 U.S.C. §103(a) as being obvious over “the admitted prior art” in view of Takuman EP ’211 (EP 1 225 211 A2) and Simizu US ’140 (US 4,216,140).

Applicants traverse this rejection, and respectfully request reconsideration and withdrawal thereof.

The Present Invention and Its Advantages

The present invention is directed to a process of preparing an air bag.

The purpose of the present invention, by means of the incorporation of aluminum hydroxide powder, is to provide a silicone rubber composition which is applied as a sealer to the peripheral portions of the silicone rubber-coated base fabric pieces prior to bonding or stitching to obtain good adherence thereto.

For example, one advantage of the present invention is evidenced in Table 1 of the present

specification (see page 15 of the specification). In Comparative Examples 1 and 2, aluminum hydroxide is not employed. Comparative Example 1 contained a smaller amount of the reinforcing inorganic filler than Comparative Example 2. Comparative Example 2 contains a larger amount of the reinforcing inorganic filler and shows better adhesion than Comparative Example 1. However, the adhesion property does not reach a desirable level.

On the other hand, in Examples 1 to 3, different amounts of untreated aluminum hydroxide powder are employed. In the Examples, excellent results (e.g., a cohesive failure of 100%) are obtained. Excellent adhesion is obtained even when the amount of aluminum hydroxide was reduced. The results of the inflation test are also satisfactory.

In Examples 4 and 5, surface treated aluminum hydroxide powder is employed. A comparison of these Examples with Example 3, where untreated aluminum hydroxide powder is employed, reveals that such adhesion property can be obtained regardless of whether or not the aluminum hydroxide has been treated. The results of the inflation test are also satisfactory.

From Examples and Comparative Examples, it is proved that when the adhesive silicone rubber compositions containing either surface-treated or untreated aluminum hydroxide is applied as a sealer to the inner surface of a periphery of silicone rubber-impregnated and/or coated fabric pieces to form a bag, an improved bond between the peripheral portions of the fabric pieces is established. In other words, in an air bag prepared by laying a pair of base fabric pieces impregnated and/or coated with silicone rubber one on the other, with the coated surfaces of the pieces inside, and bonding or stitching peripheral portions of the pieces together to form a bag, when the silicone rubber composition of the invention is used as a sealer and applied to the peripheral portions of the base fabric pieces, excellent adhesion of the peripheral portions is obtained.

Distinction over Takuman EP '211 and Simizu US '140

Takuman EP '211, Simizu US '140 and the admitted prior art fail to disclose or suggest the above feature of the present invention (e.g., the inventive silicone rubber composition (a hydrosilylation addition curable composition containing Al(OH)) is employed as a sealer to be applied to the peripheral portions of the base fabric pieces prior to bonding or stitching so as to obtain good adherence between the base fabric pieces).

As is discussed above, according to the present invention, the use of aluminum hydroxide can improve bonding between the peripheral portions of the fabric pieces as is proved by the Examples of the present specification. Such advantages can be attained even if calcium carbonate is not employed.

On the other hand, in Takuman EP '211, calcium carbonate is employed as an essential component (see, for example, components C of claim 1 of Takuman EP '211).

Further, Takuman EP '211 discloses as follows:

"[0020] The following optional components may also be added to the adhesive of the present invention: fumed titanium oxide, carbon black, diatomaceous earth, iron oxide, aluminum oxide, aluminosilicates, calcium carbonate, zinc oxide, aluminum hydroxide, silver, nickel, and other inorganic fillers, as well as fillers obtained by treating the surfaces of these fillers with the aforementioned organosilicon compounds." (Emphasis added)

Therefore, aluminum hydroxide powder is not an alternative to calcium carbonate powder for an adhesive used to bond silicone rubber at all, as alleged by the Examiner. Instead, the composition of Takuman EP '211 necessarily contains calcium carbonate. Accordingly, even if the aluminum hydroxide is blended, the composition necessarily contains calcium carbonate as much as 5 to 200 parts by weight in combination (see, component "C" of claim 1 of Takuman EP '211)

Thus, Takuman EP '211 fails to disclose or suggest that aluminum hydroxide can impart a high bond without calcium carbonate. Additionally, Takuman EP '211 fails to disclose

or suggest using aluminum hydroxide powder as an essential component in the minimum amounts and other features as recited in new claims 12-17.

Regarding Simizu US '140, the cited reference relates to a room temperature vulcanizable polyorganosiloxane composition comprising finely divided powder of $\text{Al}(\text{OH})_3$, and having a low modulus and a high elongation.

However, in the present invention, the low modulus and high elongation is not the essential feature. The improved bonding to the substrate of silicone rubber-impregnated and/or coated fabrics is the essential feature of the present invention.

Thus, the function and effect of finely divided powder of aluminum hydroxide in Simizu US '140 is quite different from those of the present invention.

The Examiner states at page 5 line 11 to page 6, line 2 as follows:

"In Table 1, Simizu et al, compares calcium carbonate with aluminum hydroxide, said aluminum hydroxide having an average particle size of between 0.01 to 50 microns. The table shows comparative examples a and c comprising calcium carbonate and comparative examples b, d, e, f, and g with aluminum hydroxide and no calcium carbonate. In every example without calcium carbonate but with the aluminum hydroxide, the adhesive has a higher elongation. More specifically, applicant is referred to example (c) and example (d). It is noted that the only difference between the compositions is that the composition of example (c) contains calcium carbonate and example (d) contains aluminum hydroxide instead of calcium carbonate. Example (d) discloses higher tensile strength and higher elongation. Therefore, at the time of the invention it would have been obvious to a person of ordinary skill in the art to modify the method of Takuman et al. by replacing Takuman et al.'s calcium carbonate powder with the aluminum hydroxide powder of Simizu et al. Such a modification would produce a composition that forms a stronger bond with a higher elongation at the peripheral portions of the base fabric pieces."

However, the purpose of the Simizu invention is to provide a self-extinguishing room temperature vulcanizable polyorganosiloxane composition. Therefore, the essential difference

between Example d and Comparative Example c is whether or not the composition is self-extinguishing,
as realized from the results of Table 2 of Simizu US '140.

Simizu US '140 merely discloses that the elongation of Example d is at most about 127% $((1590/1250) \times 100)$ of the elongation of Comparative Example c. Thus, Simizu US '140 fails to give any specific consideration to the difference of the elongation.

Therefore, from Simizu US '140, it is recognized that the finely divided powder of aluminum hydroxide is the essential component for imparting self-extinguishing property by combining it with a silanol-terminated polydiorganosiloxane having phenyl groups (A) and platinum or platinum compound (D) (cf., Simizu: column 4, lines 36-37).

More specifically, the composition of Simizu US '140 is condensation reaction room-temperature curing type, and contains (A) silanol-terminated polydiorganosiloxane and (B) substituted aminoxy group-containing organosilicon compound. Thus, the composition of Simizu US '140 is quite different from a hydrosilylation addition reaction curable composition comprising an alkenyl group-containing organopolysiloxane and an organohydrogenpolysiloxane having SiH groups and being cured under heat as in Takuman EP '211 and also as in the present invention.

In the room temperature vulcanizable polyorganosiloxane composition of Simizu, the silanol groups of the silanol-terminated, phenol group-containing organopolysiloxane (A) is condensation cured and cross-linked at room temperature with the aminoxy groups of the organo silicon compound (B) into a silicone rubber cured product. During the condensation curing reaction of the Simizu composition, hydroxyamines are necessarily eliminated and released in a silicone rubber matrix by the reaction between the silanol groups and the aminoxy groups. Therefore, the low modulus and high

elongation according to Simizu US '140 are attained by the specific curing mechanism using aminoxy group containing organosilicon compound with silanol group-terminated organopolysiloxane (as disclosed at column 9, lines 29 to 30 of Simizu US '140), rather than by using aluminum hydroxide.

Thus, even if the use of aluminum hydroxide imparts the improvement of elongation (about 127% increase), Simizu US '140 fails to disclose or suggest the present invention.

Combination of the Cited References

The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990)

In the present application, it is submitted that a *prima facie* case of obviousness has not been established, even if the cited references are combined, since none of the cited references provide any suggestion or motivation to arrive at the present invention. Specifically, as described above, the purpose of the present invention, by means of the incorporation of aluminum hydroxide powder, is to provide a silicone rubber composition which is applied as a sealer to the peripheral portions of the silicone rubber-coated base fabric pieces prior to bonding or stitching and develops good adherence thereto. On the other hand, the composition of Simizu has the specific curing mechanism releasing hydroxyamines; the hydrosilylation addition curable composition of Takuman EP '211 has a different curing mechanism which does not release hydroxyamines at all.

Accordingly, the present invention (independent claim 1 and dependent claims) is not obvious over the cited references.

CONCLUSION

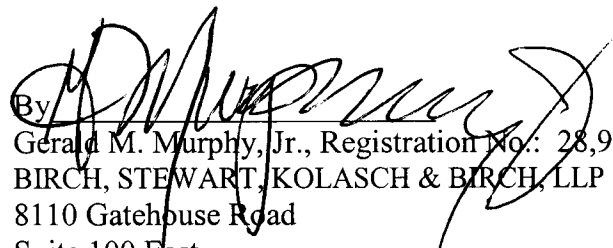
In view of the above comments, Applicants respectfully submit that the claims are in condition for allowance. A notice to such effect is earnestly solicited.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Gerald M. Murphy, Jr. (Reg. No. 28,977) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

Dated: August 16, 2006

Respectfully submitted,

By 
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